REMARKS/ARGUMENTS

Claims 1-10 and 17-26 are resubmitted. Claims 1, 17, and 26 are currently amended. Claims 11-16 have been canceled without prejudice or disclaimer. No new claims have been added.

Claims 1-8, 17-23 and 26 have been rejected under 35 USC §103(a) as being unpatentable over Padula et al, "Multidisciplinary Optimization Branch Through the Use of iSIGHT Software", in view of Cofer et al, "System Level Optimization Through the Use of Statistical Simulation", IEEE Conference Record of Southcon/96, pp 521-525 (June 1996).

Claims 9-10 and 24-25 have been rejected under 35 USC 103(a) as being unpatentable over Padula et al, in view of Cofer et al and further in view of Amundsen et al, "Preliminary Thermal Analysis of a Mars Sample Return Earth Entry Vehicle", American Institute of Aeronautics and Astronautics, AIAA-2000-2584, pp. 1-10 (2000).

Support for the amendments to the claims may be found, for example, in Figures 2, 4, and 5 and in the specification as filed, for example, at paragraph [0012].

Rejections - 35 USC § 103(a)

Claims 1-8, 17-23 and 26 have been rejected under 35 USC §103(a) as being unpatentable. The rejections have been addressed by amending claims 1, 17, and 26 to include a concurrently executed system design optimization process. Support for the amendments to claims can be found in the specification, for example at paragraph [0012] and the figures. Accordingly, it is respectfully submitted that the rejections under 35 USC § 103(a) should be

withdrawn.

Padula et al./Cofer et al.

Claims 1-8, 17-23 and 26 have been rejected under 35 USC §103(a) as being unpatentable over Padula et al, "Multidisciplinary Optimization Branch Through the Use of iSIGHT Software", in view of Cofer et al, "System Level Optimization Through the Use of Statistical Simulation", IEEE Conference Record of Southcon/96, pp 521-525 (June 1996).

Although Applicant may agree with the Office action that Padula discloses use of the iSIGHT software tool for single-disciplinary analyses and optimizations and for connecting several simulation codes together without changing any of the codes (Padula, p. 6, paragraph 2), Applicant submits that Cofer et al discloses a computer system that employs well known statistical analysis to indicate the statistical manufacturability of a component or system.

Cofer et al discloses a system that uses a serial process for determining the acceptability of a given design. Cofer does not disclose a system that is configured to concurrently modify a given system to meet a set of system performance parameters.

For example, Cofer states, "STADIUM is primarily employed in predicting the variation of system level parameters due to expected incidental variations encountered during the phases of manufacturing and use" (pg 522, 3rd paragraph). It should therefore be understood that Cofer does not disclose a system that can modify and concurrently design a given system, but rather, it is used to predict the performance of a given system. There is no discussion of automated design automation, but rather, an engineer must evaluate the output from the STADIUM software, and then manually redesign the system based

upon the outputs. Quite to the contrary, the instant application provides a system that concurrently analyzes and modifies the design of a system to iteratively arrive at an optimized design employing a set of multidisciplinary parameters.

Amundsen et al.

Claims 24-25 have been rejected under 35 USC §103(a) as being unpatentable over Padula in view of Cofer further in view of Amundsen.

While Amundsen may deal with thermal protection issues, and may divide a thermal analysis into four phases, the four phases are merely single-disciplinary thermal analyses at successive periods in time and do not represent a true concurrent multi-disciplinary analysis. Thus, even if combined with the multi-disciplinary analysis of Padula, there is still no motivation nor suggestion to provide an automated, system level multi-disciplinary reusable component that would embody system level problem definition during computer execution of a multi-disciplinary module; there is still no motivation nor suggestion to provide an automated, concurrent system level multi-disciplinary reusable component that would provide and receive global inputs and outputs for a multi-disciplinary module during computer execution of the multi-disciplinary module; and there is still no motivation nor suggestion to provide an automated, system level multi-disciplinary reusable component that would interact with a chief engineer during computer execution of a system optimization process performed by the multi-disciplinary module as in the present invention claimed by the currently amended claims.

Therefore, Applicant submits that Padula in view of Cofer does not make the present invention obvious (as claimed by the amended claims), but rather merely presents some examples of the use of a software tool that may be used

in various ways different from the present invention to achieve alternative results from those of the present invention.

CONCLUSION

Reconsideration and withdrawal of the Office Action with respect to claims 1-10 and 17-26 is requested. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

In the event the examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

Respectfully submitted,

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